

What is claimed is:

1. A radiographic apparatus comprising:
 - a radiation source for emitting an electromagnetic
 - 5 wave to an object under examination;
 - detecting means for detecting said electromagnetic
 - wave emitted to and transmitted through said object; and
 - scan means for moving said radiation source and said
 - detecting means together for scanning action;
 - 10 a three-dimensional sectional image being obtained
 - from a group of projection data detected in varied positions
 - of said detecting means moved by said scan means;
 - wherein said radiation source and said detecting
 - means are arranged such that a radiation axis linking said
 - 15 radiation source and said detecting means is inclined at a
 - predetermined angle relative to a sectional axis passing
 - through a site of interest of said object; and
 - said scan means includes a radiation source housing
 - for surrounding said radiation source, a detecting means
 - 20 housing for surrounding said detecting means, and rotating
 - means for rotating said radiation source and said detecting
 - means in the respective housings together about said sec-
 - tional axis.
- 25 2. A radiographic apparatus as defined in claim 1, wherein

said radiation source housing and said detecting means housing are connected to a rotary shaft connected to said rotating means, said rotary shaft being disposed at an end of each of said housings.

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3. A radiographic apparatus as defined in claim 1, wherein said detecting means is a flat panel detector having a plurality of gate lines switchable on and off for taking in said electromagnetic wave transmitted, and a plurality of read
10 lines extending perpendicular to said gate lines for reading said projection data, said flat panel detector being disposed such that each of said read lines extends along a projection axis formed by said sectional axis projected on a detecting plane of said flat panel detector.

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4. A radiographic apparatus as defined in claim 3, wherein said gate lines are turned on simultaneously to take in said electromagnetic wave in positions corresponding to said gate lines simultaneously as electric charges, said electric
20 charges taken in being read as said projection data through said read lines, a lowpass filtering being effected on said projection data by turning on said gate lines simultaneously.

5. A radiographic apparatus as defined in claim 1, said
25 scan means is arranged such that said rotating means

rotates said radiation source and said detecting means together to make one rotation about said sectional axis in 0.1 second at most.

- 5 6. A radiographic apparatus as defined in claim 1, wherein said radiation source is an X-ray tube for emitting X rays, said X-ray tube being a rotating anode X-ray tube including a cathode for discharging thermoelectrons, an anode for generating X rays upon collision with accelerated
- 10 thermoelectrons from said cathode, and an anode rotating shaft for rotating said anode, said X-ray tube being constructed and arranged so that said anode rotating shaft is parallel to said sectional axis.
- 15 7. A radiographic apparatus as defined in claim 1, wherein said radiation source is an X-ray tube for emitting X rays, said X-ray tube being a rotating cathode X-ray tube including a cathode for discharging thermoelectrons, an anode for generating X rays upon collision with accelerated
- 20 thermoelectrons from said cathode, and a support for supporting said cathode, said anode being shaped annular and fixed around an axis parallel to said sectional axis, said support being shaped annular around said axis parallel to said sectional axis, said X-ray tube being arranged so that
- 25 said cathode is rotatable with said support about said axis

parallel to said sectional axis.

8. A radiographic apparatus comprising:

a radiation source for emitting an electromagnetic wave to an object under examination;

5 detecting means for detecting said electromagnetic wave emitted to and transmitted through said object;

scan means for moving said radiation source and said detecting means together for scanning action; and

an image processor for obtaining a three-dimensional sectional image from a group of projection data detected in
10 varied positions of said detecting means moved by said scan means;

wherein said radiation source and said detecting means are arranged such that a radiation axis linking said
15 radiation source and said detecting means is inclined at a predetermined angle relative to a sectional axis passing through a site of interest of said object; and

said scan means includes main scan rotating means for rotating said radiation source and said detecting means
20 together about said sectional axis, and auxiliary scan rotating means for rotating said radiation source and said detecting means together relative to said object about a scan center axis which is one of axes extending substantially perpendicular to said sectional axis.

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9. A radiographic apparatus as defined in claim 8, wherein
said scan means includes a radiation source housing for
surrounding said radiation source, and a detecting means
housing for surrounding said detecting means, said main
5 scan rotating means rotating said radiation source and said
detecting means in the respective housings together about
said sectional axis.

10. A radiographic apparatus as defined in claim 8,
10 wherein said scan means includes a scan housing for
surrounding said radiation source and said detecting means,
said auxiliary scan rotating means rotating said radiation
source and said detecting means in said scan housing
together about said scan center axis.

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11. A radiographic apparatus as defined in claim 10,
wherein said auxiliary scan rotating means includes a scan
housing support member for holding said scan housing, and
a feed mechanism between said scan housing support
20 member and said scan housing for rotating said scan
housing.

12. A radiographic apparatus as defined in claim 8,
wherein a main scan rotation about said sectional axis is
25 faster than an auxiliary scan rotation about said scan center

axis.

13. A radiographic apparatus as defined in claim 8,
wherein a range of auxiliary scan rotation about said scan
5 center axis is set to at least $\pi-2\alpha$, where α is a
tomosynthetic angle between said sectional axis and said
radiation axis linking said radiation source and said
detecting means.

10 14. A radiographic apparatus as defined in claim 8,
wherein said scan center axis of said auxiliary scan is a
horizontal axis, and said sectional axis of said main scan is a
vertical axis.

15 15. A radiographic apparatus as defined in claim 8,
wherein said scan center axis of said auxiliary scan is a
vertical axis, and said sectional axis of said main scan is a
horizontal axis.

20 16. A radiographic apparatus as defined in claim 15,
wherein said auxiliary scan rotating means is arranged to
rotate said radiation source and said detecting means
together about said vertical axis relative to a ceiling surface.

25 17. A radiographic apparatus as defined in claim 15,

wherein said auxiliary scan rotating means is arranged to rotate said object about said vertical axis relative to a floor surface.

5 18. A radiographic apparatus as defined in claim 8,
wherein said scan means is arranged such that said main
scan rotating means causes said radiation source and said
detecting means to make one rotation about said sectional
axis in at most 0.1 second.

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19. A radiographic apparatus as defined in claim 8,
wherein said scan means is arranged such that said
auxiliary scan rotating means causes said radiation source
and said detecting means to make a half rotation about said
15 scan center axis in at most 5 seconds.

20. A radiographic apparatus as defined in claim 8, further
comprising measuring means for detecting biosignals from
said object, and radiation source control means for control-
20 ling said radiation source to emit the electromagnetic wave
to said object synchronously with predetermined times in a
periodic motion detected by said measuring means.